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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ZIMMERMANN, JOHN P

ART UNIT

PAPER NUMBER

2861

MAIL DATE

DELIVERY MODE

05/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,698	Applicant(s) IMOTO ET AL.	
	Examiner John P. Zimmermann	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>24 MAR 08</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The examiner has approved the corrected drawings submitted on 20 February 2008, and the objection has been withdrawn. These drawings are in compliance with 37 CFR 1.121(d) and now the drawings are in compliance with 37 CFR 1.84(p)(4 & 5).

Information Disclosure Statement

2. The information disclosure statement filed 24 March 2008 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of the Japanese Official Action dated 29 February 2008. It has been placed in the application file, but the Japanese Action with no translation thereof has not been considered and has been crossed off to indicate such.

Specification

3. Applicant's amendments to correct the various informalities of the specification have been noted and the objection is withdrawn.

Response to Amendment

4. Applicant's amendment to **claim 1**, to incorporate the limitations of original **claim 10**, has been recognized additionally, **claims 2-13** have been cancelled as requested. No further action is required.

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5. Applicant's presentation of new **claims 14-22** is noted and addressed herein.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

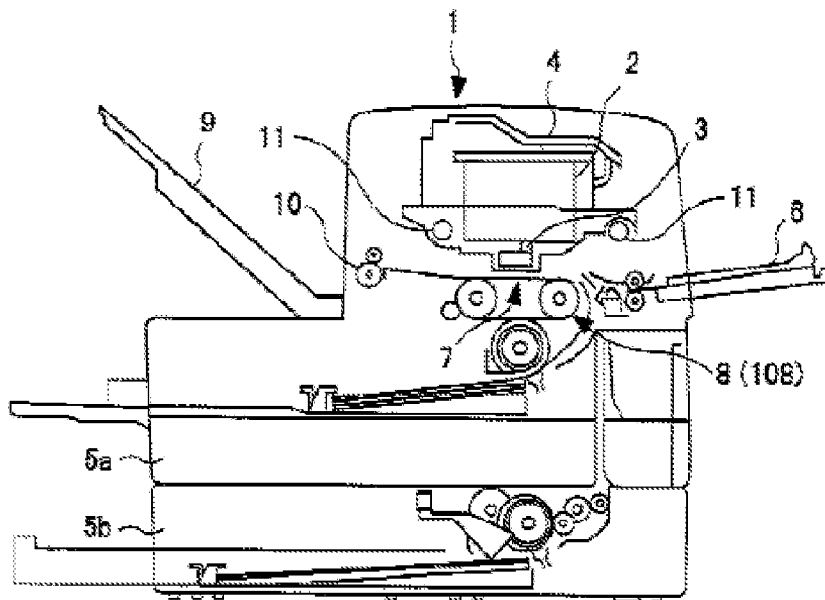
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claims 1, 14, & 16-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Maki et al.**, (US 2002/0126193 A1) and further in view of **Fukushima et al.**, (US 6,097,408 A).

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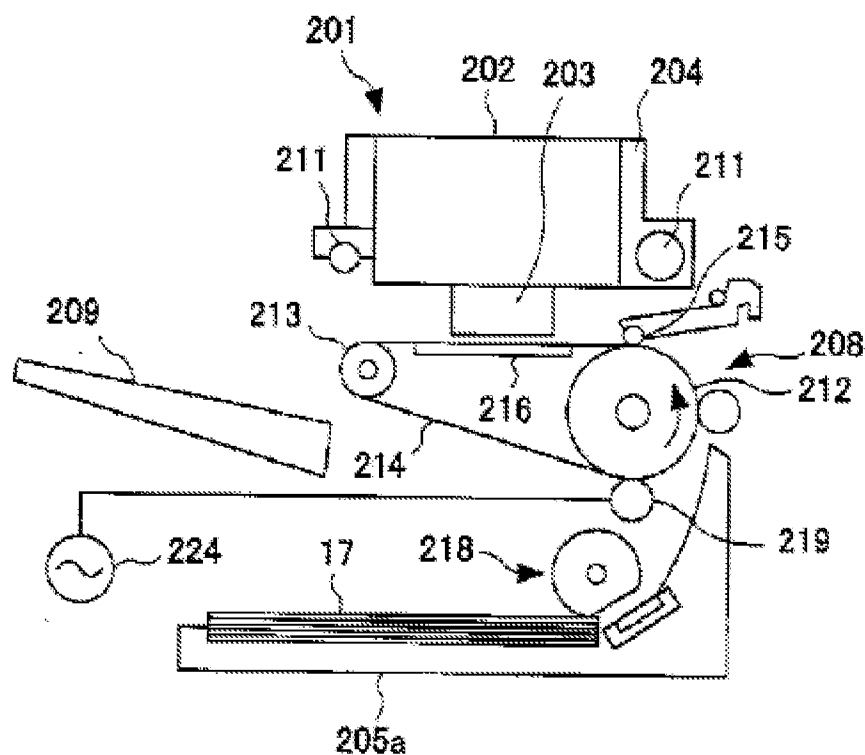
a. As related to independent **claim 1**, Maki et al. teach an image forming apparatus, comprising a head unit having a discharge nozzle for discharging an ink wherein the head unit discharges the ink from the discharge nozzle to print an image on a recording sheet (Maki et al. – Title; Detailed Description, Page 6, Paragraph 131; and Figure 1, Reference #1 & #3, shown below) and a conveyance unit confronting the head unit and conveying the sheet in a movement direction to a position where the sheet confronts the head unit (Maki et al. – Abstract; Detailed Description, Page 7, Paragraph 131; and Figure 1, Reference #8 & #3, shown below).

FIG. 1

b. Continuing with **claim 1**, Maki et al. teach a charging unit [i.e. belt charging unit] provided in the conveyance unit to supply an AC bias voltage to the conveyance unit (Maki et al. – Detailed Description, Page 10, Paragraph 153 and Figure 18, Reference #208, #214, #215, #216, & #219, shown below) and a charge eliminating unit [i.e.

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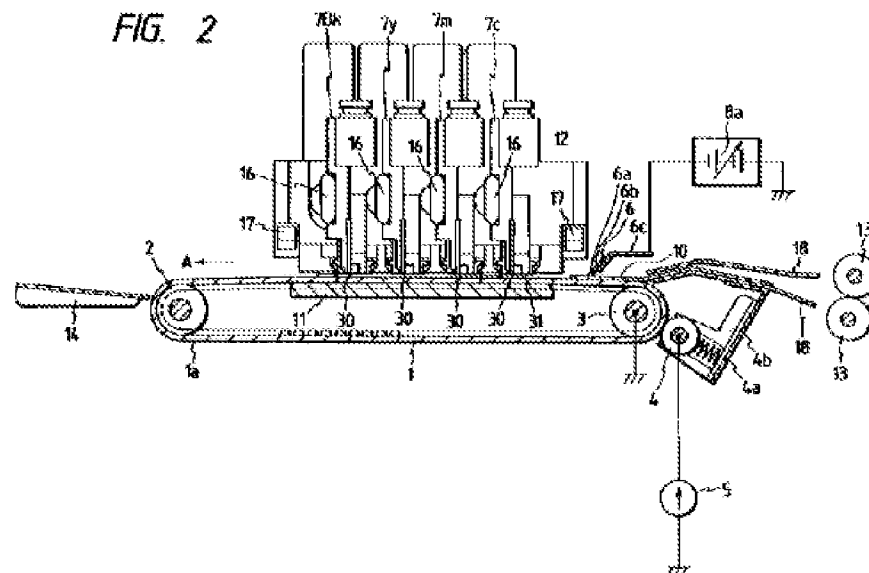
grounding unit] eliminating charge of a printing surface of the recording sheet, the charge eliminating unit being disposed at a position on a downstream side of the charging unit in the movement direction of the conveyance unit and on an upstream side of the head unit (Maki et al. – Detailed Description, Page 10, Paragraph 153 and Figure 18, Reference #212, shown below).

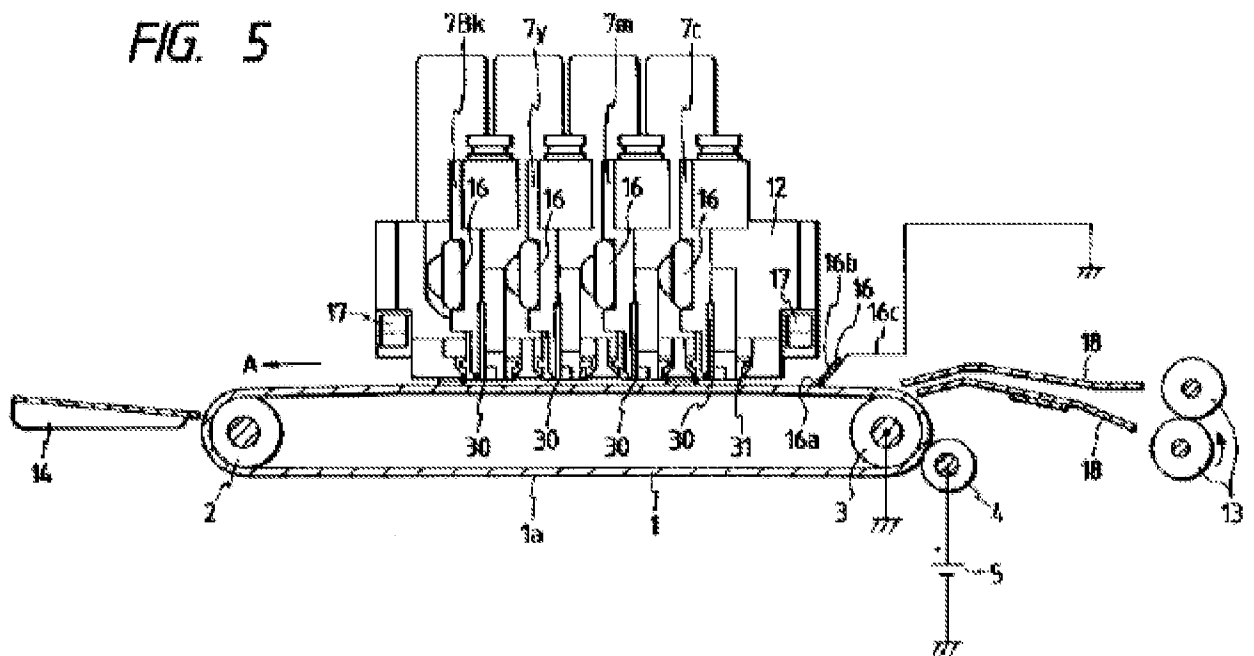
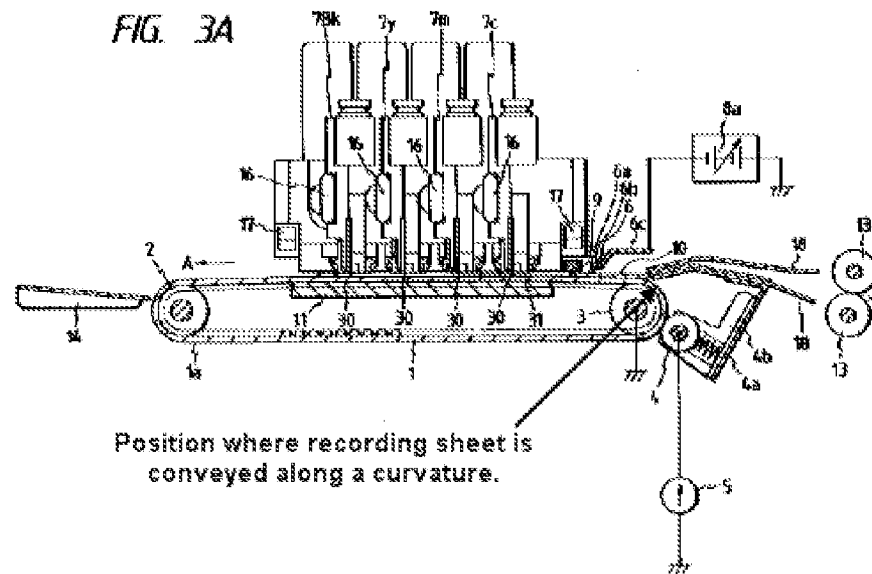
FIG. 18

c. Continuing with **claim 1**, Maki et al. *do not* specifically detail the charge eliminating unit disposed downstream of where the recording sheet is conveyed. *However*, Fukushima et al. teach an image forming apparatus [i.e. ink jet recording apparatus] with a charging unit and a charge eliminating unit wherein the conveyance unit comprises a conveyance belt wound around at least two rollers, and the charge

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eliminating unit [i.e. de-electrifying brush] is disposed on a downstream side of a position where the recording sheet is conveyed along a curvature of each of said at least two rollers by the conveyance belt, in the movement direction of the conveyance unit (Fukushima et al. – Detailed Description, Column 6, Lines 50-55, Column 7 Lines 35-50; Column 11, Lines 9-15; Figures 2 & 3, Reference #A, #1, #2, #3, #6 & Arrows and Figure 5, Reference #16, #1, #2, #3, #4, & #5, all shown below).





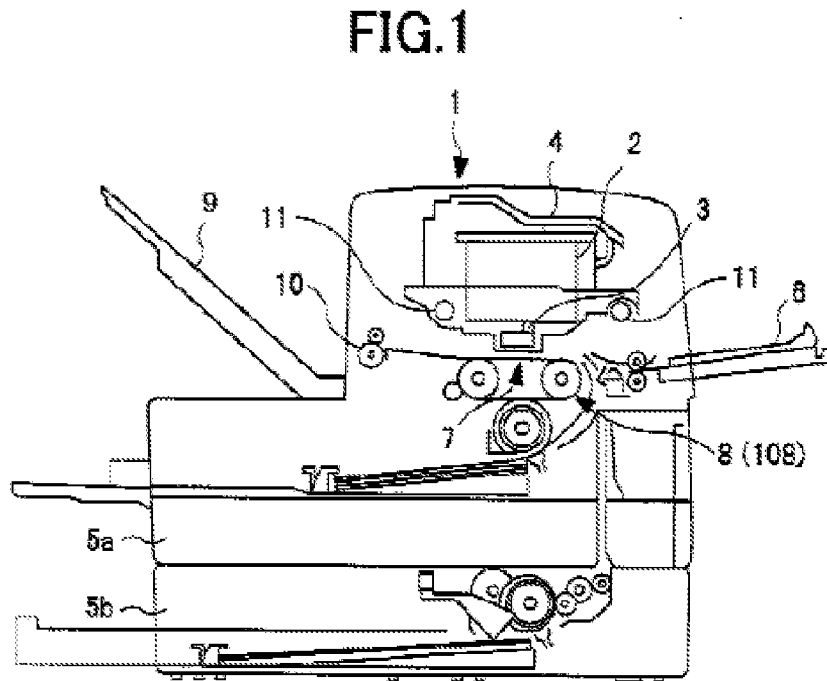
- d. As related to dependent **claim 14**, while Maki et al. teaches the charge eliminating unit is disposed in close proximity to the head unit (Maki et al. – Figure 18, Reference #203 & #212, shown previously), Fukushima et al. teach a position almost identical to the

position detailed by the present application in the specifications and drawings, that being a position near the head unit (Fukushima et al. – Figure 3A, Reference #6, shown above).

Given the same field of endeavor, specifically an ink jet recording apparatus with a conveyance device that includes charging and discharging portions, it is apparent that one of ordinary skill in the art at the time the invention was made would have been motivated to combine the image forming apparatus with the charge elimination system and the specific layout thereof as taught by Maki et al. with the specific use of a charge eliminating unit in the form of an electric conduction brush to eliminate the charge on the recording medium and the specific layout thereof as taught by Fukushima et al. in an effort to provide additional means charge elimination, while producing a high quality recording and preventing defective ink discharging even though static electricity is utilized for attracting and holding the recording medium (Fukushima et al. – Summary, Column 3-4). While Fukushima et al. shows all specific examples using Direct Current (DC) further motivation to combine is easily obtained by referencing Fukushima et al. and the acknowledgment of the use of Alternating Current (AC) in lieu of DC, whereby the principles remain the same (Maki et al. – Detailed Description, Column 7, Lines 35-37 and Column 16, Lines 29-32).

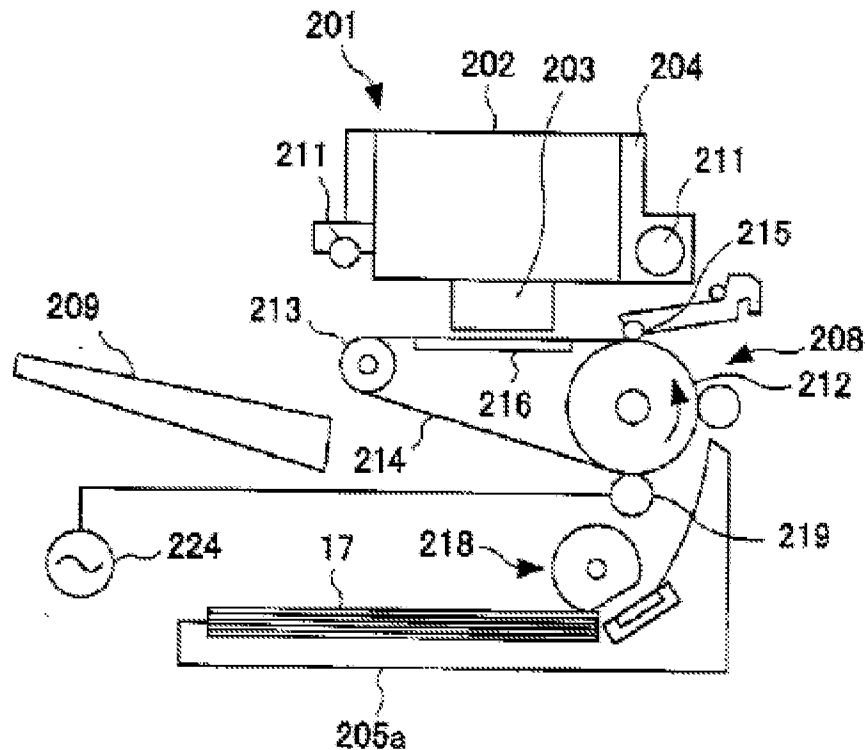
e. As related to independent **claim 16**, Maki et al. teach an image forming apparatus, comprising a head unit having a discharge nozzle for discharging an ink wherein the head unit discharges the ink from the discharge nozzle to print an image on a recording sheet (Maki et al. – Title; Detailed Description, Page 6, Paragraph 131; and Figure 1, Reference #1 & #3, shown below) and a conveyance unit confronting the head unit and conveying the sheet in a movement direction to a position where the sheet confronts the head unit

(Maki et al. – Abstract; Detailed Description, Page 7, Paragraph 131; and Figure 1, Reference #8 & #3, shown below).

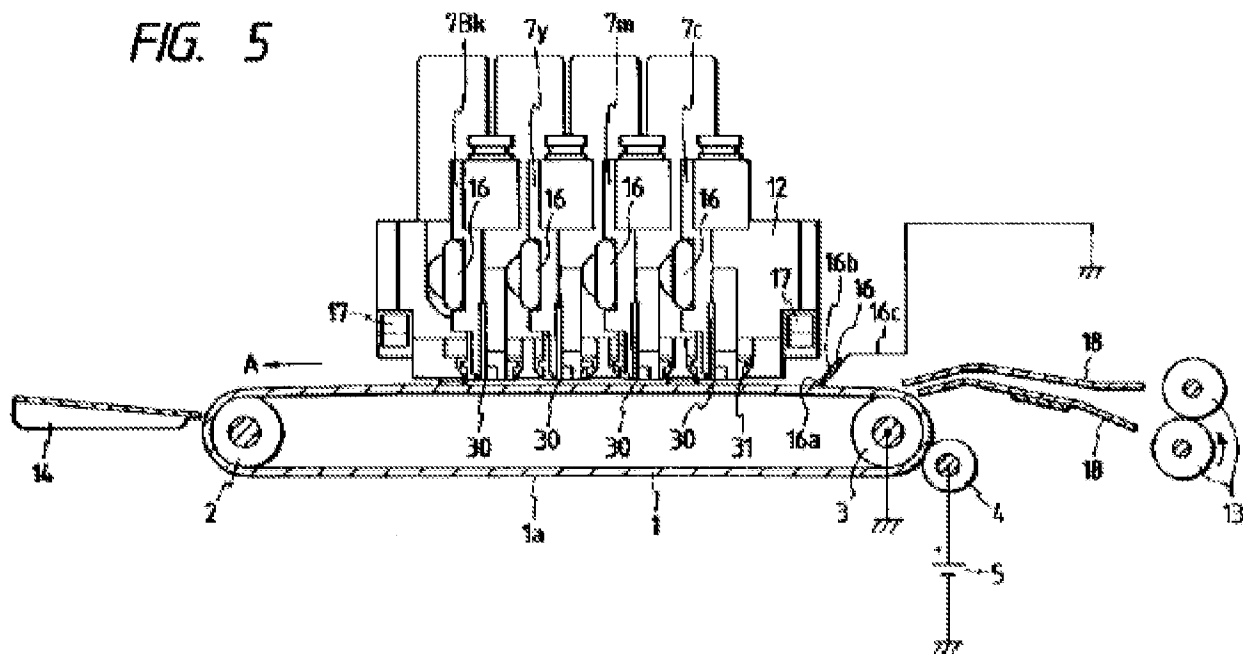


f. Continuing with **claim 16**, Maki et al. teach a charging unit [i.e. belt charging unit] provided in the conveyance unit to supply an AC bias voltage to the conveyance unit (Maki et al. – Detailed Description, Page 10, Paragraph 153 and Figure 18, Reference #208, #214, #215, #216, & #219, shown below) and a charge eliminating unit [i.e. grounding unit] eliminating charge of a printing surface of the recording sheet, the charge eliminating unit being disposed at a position on a downstream side of the charging unit in the movement direction of the conveyance unit and on an upstream side of the head unit (Maki et al. – Detailed Description, Page 10, Paragraph 153 and Figure 18, Reference #212, shown below).

FIG. 18



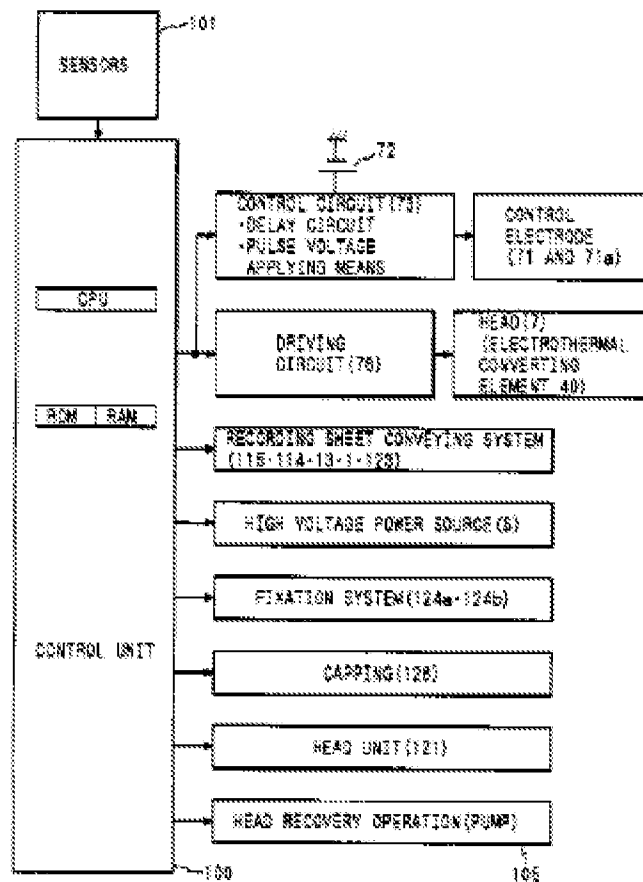
g. Continuing with **claim 16**, Maki et al. *do not* specifically teach a voltage of polarity which is opposite to a charging polarity. *However*, Fukushima et al. teach an image forming apparatus [i.e. ink jet recording apparatus] with a voltage supplying unit [i.e. negative pole of a power source (-)] supplying to the charge eliminating unit [i.e. electrode] a voltage of polarity which is opposite to a charging [i.e. charging roller (+)] polarity of a conveyance belt of the conveyance unit at a position where the conveyance belt confronts the charge eliminating unit (Fukushima et al. - Detailed Description, Columns 5, Lines 53-58, Column 6, Lines 1-3, Column 7, Lines 45-50, & Column 16, Lines 10-15 and Figure 5, Reference #16, #4, #5, & (+), shown below).



h. Continuing with **claim 16**, while the combination of Maki et al. and Fukushima et al. *does not* specifically teach the movement distance of the conveyance unit as broadly listed in the present claim, it would have been obvious to one of ordinary skill in the art at the time of the invention to obtain a minimum movement distance based on the electrical fields generated on the conveyance unit using the identical or likely an even more accurate equation and any unspecified charging period length from a positively charged portion of the conveyance unit to a negatively charged portion of the conveyance unit, if for no other reason than to enable the conveyance system to move and attract the recording medium while properly affixing said medium to its' surface before eliminating the charge used for attraction.

i. As related to dependent **claim 17**, the combination of Maki et al. and Fukushima et al. teach the limitations of **claim 16** for the reasons above and additionally Fukushima et al. teach a control unit controlling the voltage supplying unit so that no voltage is

supplied to the charging unit and the charge eliminating unit when movement of the conveyance unit is stopped (Fukushima et al. – Detailed Description, Column 8, Line 65 - Column 9, Line 3 and Figure 6B, Reference #100, shown below).

FIG. 6B

j. As related to dependent **claim 18**, the combination of Maki et al. and Fukushima et al. teach the limitations of **claim 16** for the reasons above and additionally Fukushima et al. teach a control unit controlling the voltage supplying unit to vary the voltage supplied to the charge eliminating unit, depending on a kind of the recording sheet (Fukushima et al. – Detailed Description, Column 6, Lines 53-56 and Figure 6B, Reference #100, shown above).

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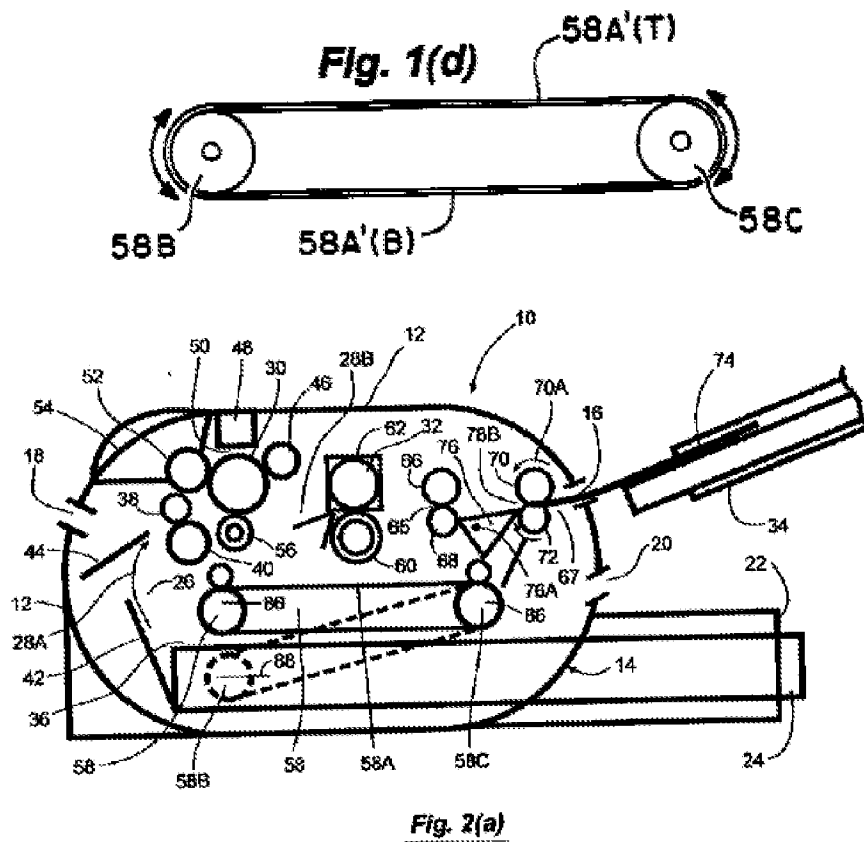
k. As related to dependent **claim 19**, while Maki et al. teaches the charge eliminating unit is disposed in close proximity to the head unit (Maki et al. – Figure 18, Reference #203 & #212, shown previously), Fukushima et al. teach a position almost identical to the position detailed by the present application in the specifications and drawings, that being a position near the head unit (Fukushima et al. – Figure 3A, Reference #6, shown above).

Given the same field of endeavor, specifically an ink jet recording apparatus with a conveyance device that includes charging and discharging portions, it is apparent that one of ordinary skill in the art at the time the invention was made would have been motivated to combine the image forming apparatus with the charge elimination system and the specific layout thereof as taught by Maki et al. with the specific use of a electric conduction brush to eliminate the charge on the recording medium, a controlling unit, and the specific layout thereof as taught by Fukushima et al. in an effort to provide additional means charge elimination, while producing a high quality recording and preventing defective ink discharging even though static electricity is utilized for attracting and holding the recording medium (Fukushima et al. – Summary, Column 3-4). While Fukushima et al. shows all specific examples using Direct Current (DC) further motivation to combine is easily obtained by referencing Fukushima et al. and the acknowledgment of the use of Alternating Current (AC) in lieu of DC, whereby the principles remain the same (Maki et al. – Detailed Description, Column 7, Lines 35-37 and Column 16, Lines 29-32).

10. **Claims 15, 20, & 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Maki et al.**, (US 2002/0126193 A1) and **Fukushima et al.**, (US 6,097,408 A) as applied to **claims 1 & 16** above, and in further view of **Eskey** (US 6,909,872 B2) and **Kashiwagi et al.** (US 2001/0028381 A1).

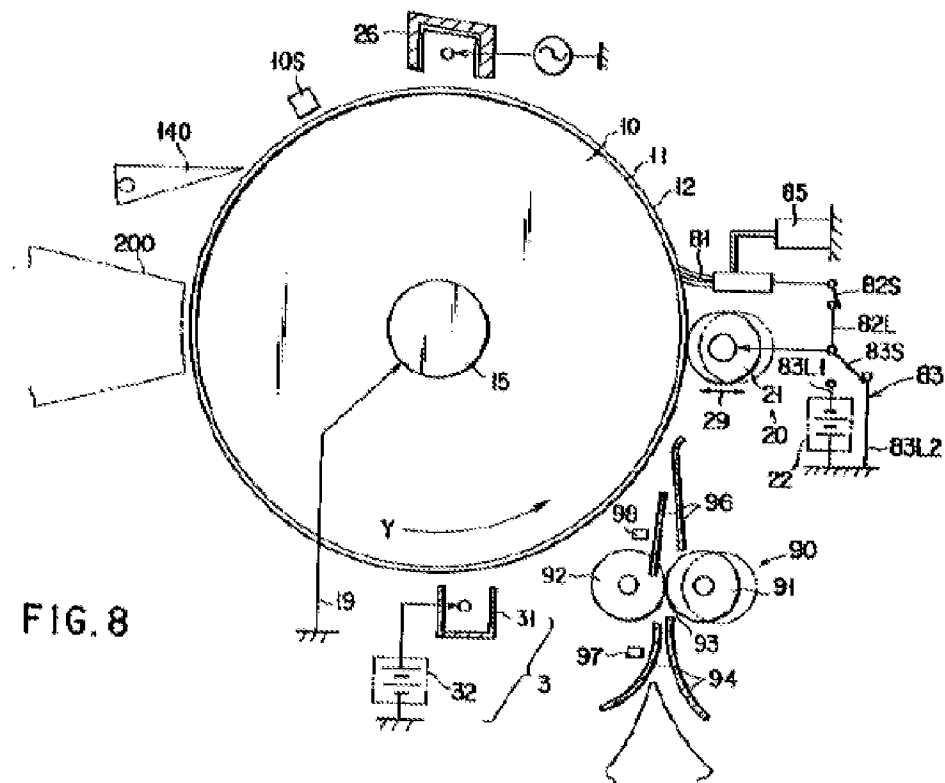
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a. As related to further dependent **claim 15**, and further dependent **claim 20**, the previous combination of Maki et al. and Fukushima et al. remains as applied to **claims 1 & 14** and **claims 16 & 19** above, but *does not* specifically teach a sheet reversing unit with a sheet separating unit. *However*, Eskey teaches an image forming apparatus with a sheet reversing unit reversing the recording sheet and a sheet separating unit (Eskey – Detailed Description, Column 7, Lines 1-57 and Figure 2(a), Reference #76, shown below) for use when the conveyance unit is reversely rotated to convey the recording sheet (Eskey – Figure 1(d), Reference #58A' and Arrows, shown below) after the image is printed on the printing surface of the recording sheet, to the sheet reversing unit (Eskey – Summary, Columns 1-2).



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b. Continuing with **claim 15**, Kashiwagi et al. specifically teaches multiple charging and discharging sections (Kashiwagi et al. – Figure 8, Reference #3, #21, #26, & #81, shown below) and the process of separating the charge eliminating unit from the recording sheet depending on the recording stage of the apparatus (Kashiwagi et al. – Detailed Description, Page 14, Paragraphs 206-210 and Figures 16 & 17, shown below).



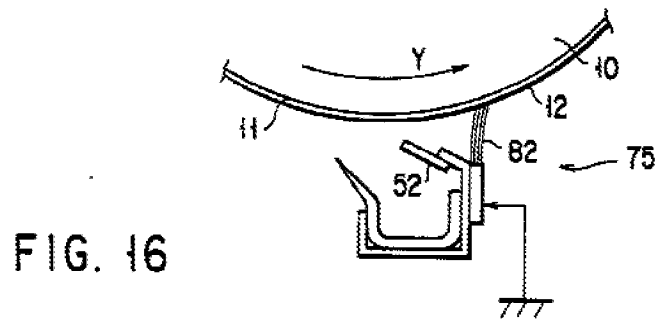


FIG. 16

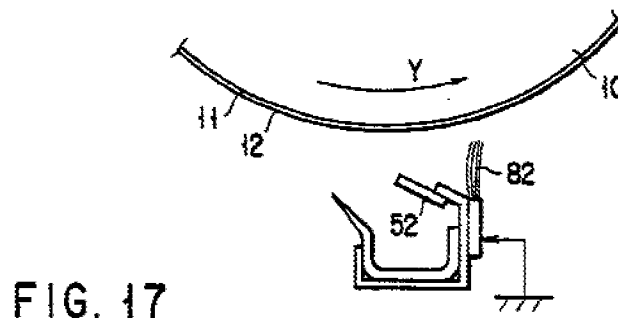
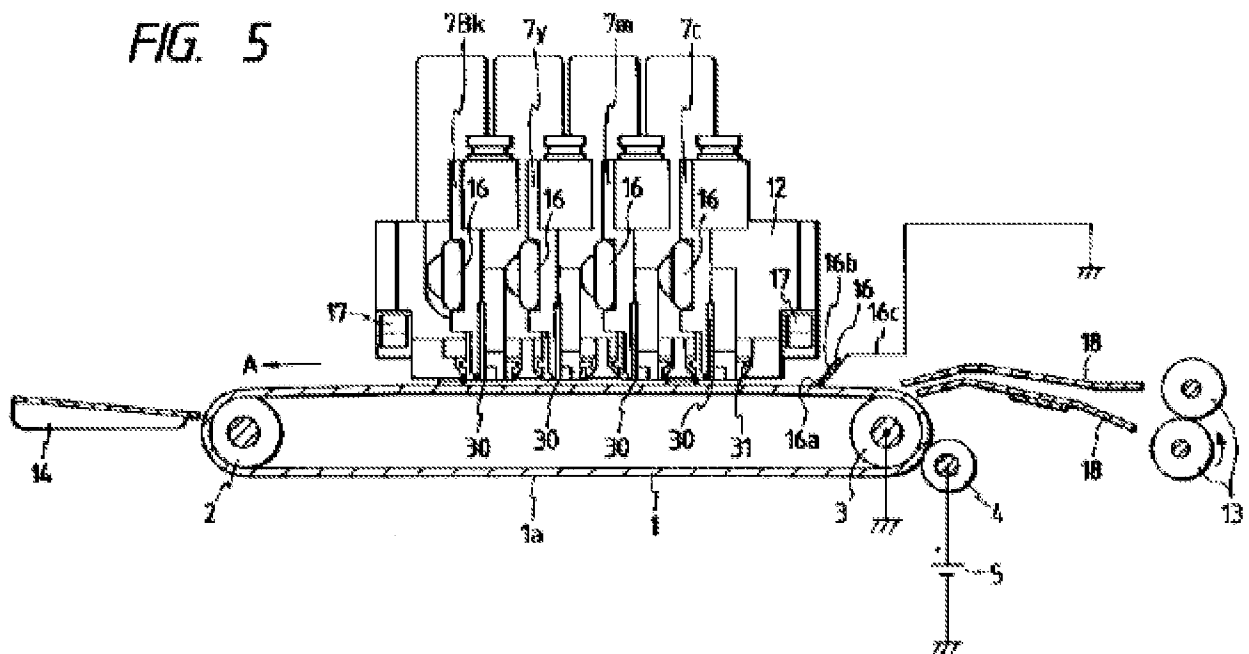


FIG. 17

Given the same field of endeavor, specifically a ink jet recording apparatus with a conveyance system that includes various portions, it is apparent that one of ordinary skill in the art at the time the invention was made would have been motivated to combine the image forming apparatus with the charge elimination system and the specific layout thereof as taught by the combination of Maki et al. and Fukushima et al. with the specific use of a sheet reversing unit with a sheet separating unit and a reversible conveyance system as taught by Eskey and the separation of the charge eliminating unit from the recording sheet depending on the recording stage of the apparatus as taught by Kashiwagi et al. in an effort to provide a multipath printing apparatus with first and second flow direction of the recording medium (Eskey – Title and Abstract) and provide optional control of the charging and elimination of the charge from the various surfaces of the conveyance means and recording medium (Kashiwagi et al. – Detailed Description, Page 14, Paragraphs 202-209) an reliably and securely hold the print medium to the conveyance means without a complicated structure (Kashiwagi et al. – Summary, Paragraph 8).

11. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Maki et al.**, (US 2002/0126193 A1) and **Fukushima et al.**, (US 6,097,408 A) as applied to **claim 16** above, and in further view of **Kashiwagi et al.** (US 2001/0028381 A1).

The previous combination of Maki et al. and Fukushima et al. remains as applied to **claim 16**, and continues to teach both the charging unit and the charge eliminating unit being connected to a voltage supply unit (Fukushima et al. – Figure 5, Reference #4, #5, #16, and GND/REF indicator, shown below), but *does not* specifically teach the voltage supplying unit supplying a bias voltage of same polarity to the charging unit and charge eliminating unit at a time, respectively. *However*, Kashiwagi et al. clearly teach the exact same voltage supplying unit used to supply a bias voltage of the same polarity to the charging unit [i.e. roller] and charge eliminating unit [i.e. brush] at a time, respectively (Kashiwagi et al. - Figure 8, Reference #21, #22, #81, & #82L, shown above).



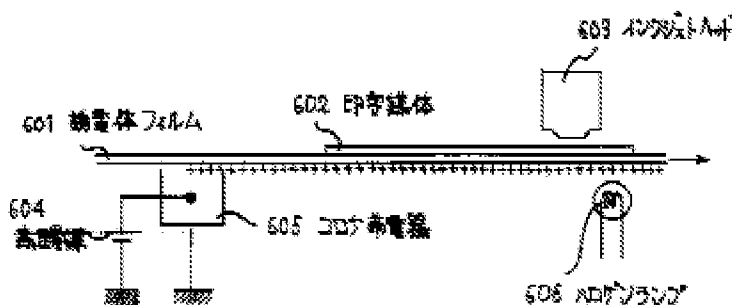
Given the same field of endeavor, specifically a ink jet recording apparatus with a conveyance system that includes various portions, it is apparent that one of ordinary skill in the art at the time the invention was made would have been motivated to combine the image forming apparatus with the charge elimination system and the specific layout thereof as taught by the combination of Maki et al. and Fukushima et al. with the separation of the charge eliminating unit from the recording sheet depending on the recording stage of the apparatus and use of the same voltage source for application of bias voltage to multiple charging and discharging units as taught by Kashiwagi et al. in an effort to provide optional control of the charging and elimination of the charge from the various surfaces of the conveyance means and recording medium (Kashiwagi et al. – Detailed Description, Page 14, Paragraphs 202-209) and reliably and securely hold the print medium to the conveyance means without a complicated structure (Kashiwagi et al. – Summary, Paragraph 8).

12. **Claim 22** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Maki et al.**, (US 2002/0126193 A1) and further in view of **Fukushima et al.**, (US 6,097,408 A) and **Kawada et al.**, (JP 09-254460 A).

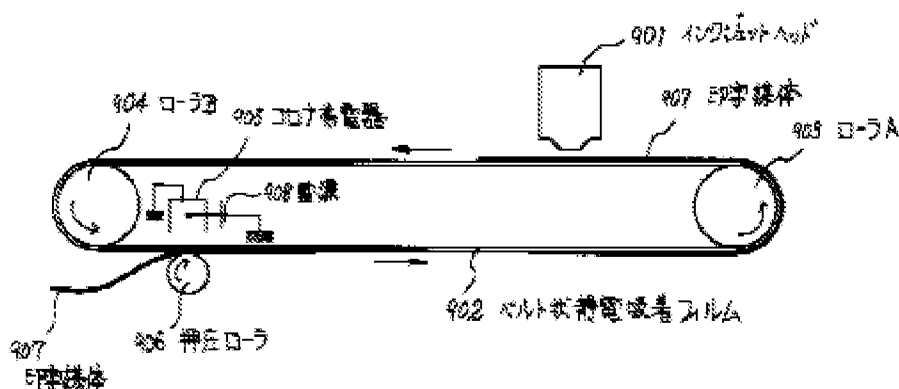
a. Maki et al. teach an image forming apparatus, comprising a head unit having a discharge nozzle for discharging an ink wherein the head unit discharges the ink from the discharge nozzle to print an image on a recording sheet (Maki et al. – Title; Detailed Description, Page 6, Paragraph 131; and Figure 1, Reference #1 & #3, shown below) and a conveyance unit confronting the head unit and conveying the sheet in a movement direction to a position where the sheet confronts the head unit (Maki et al. – Abstract; Detailed Description, Page 7, Paragraph 131; and Figure 1, Reference #8 & #3, shown previously). Continuing, Maki et al. teach a charging unit [i.e. belt charging unit]

provided in the conveyance unit to supply an AC bias voltage to the conveyance unit (Maki et al. – Detailed Description, Page 10, Paragraph 153 and Figure 18, Reference #208, #214, #215, #216, & #219, shown below) and a charge eliminating unit [i.e. grounding unit] eliminating charge of a printing surface of the recording sheet, the charge eliminating unit being disposed at a position on a downstream side of the charging unit in the movement direction of the conveyance unit and on an upstream side of the head unit (Maki et al. – Detailed Description, Page 10, Paragraph 153 and Figure 18, Reference #212, shown previously). Fukushima et al. continue by teaching an image forming apparatus [i.e. ink jet recording apparatus] with a head unit, charging unit, a charge eliminating unit and a conveyance unit wherein the charge eliminating unit [i.e. de-electrifying brush] is disposed on a downstream side of the charging unit in the movement direction of the conveyance unit and on an upstream side of the head unit (Fukushima et al. – Detailed Description, Column 6, Lines 50-55, Column 7 Lines 35-50; Column 11, Lines 9-15; Figures 2 & 3, Reference #A, #1, #2, #3, #6 & Arrows and Figure 5, Reference #16, #1, #2, #3, #4, & #5, all shown previously). Maki et al. and Fukushima et al. **do not** teach a heating unit heating the recording sheet. **However,** Kawada et al. teach transferring print medium using electrostatic attraction and a heating unit (Kawada et al. – Abstract and Figure 6, Reference #606, shown below) disposed upstream of the charge eliminating unit (Kawada et al. – Figure 9, Reference #908, shown below) in the movement direction of the conveyance unit.

【図6】



【図9】



Given the same field of endeavor, specifically an ink jet recording apparatus with a conveyance device that includes charging and discharging portions, it is apparent that one of ordinary skill in the art at the time the invention was made would have been motivated to combine the image forming apparatus with the charge elimination system as taught by Maki et al. with the further detailed charging and charge elimination means as taught by Fukushima et al. along with a means to heat the recording medium, thereby enhancing the attraction characteristics of the electrical charge, particularly the specific use of a heating unit disposed therein as taught by Kawada et al. in an effort to provide additional means of charge elimination, while producing a high quality recording and preventing defective ink discharging even though static electricity is utilized for attracting and holding the recording medium (Fukushima et al. – Summary, Column 3-4) and to provide additional means of **enhancing the attraction** of the print medium (Kwada et al. – Abstract).

While Fukushima et al. shows all specific examples using Direct Current (DC) further motivation to combine is easily obtained by referencing Fukushima et al. and the acknowledgment of the use of Alternating Current (AC) in lieu of DC, whereby the principles remain the same (Maki et al. – Detailed Description, Column 7, Lines 35-37 and Column 16, Lines 29-32).

Response to Arguments

13. Applicant's arguments with respect to **claim 1** have been considered but are moot in view of the new ground(s) of rejection. Meanwhile, applicant's arguments filed 20 February 2008 have been fully considered but they are not persuasive.

14. With respect to **claim 1** and therefore **claims 14-15** which inherently contain all of the limitations of independent **claim 1**, applicant argued that “Maki... does not disclose or suggest a charge eliminating unit disposed... (claim 1 of the present application)” and “Fukushima... does not disclose or suggest providing a charge eliminating unit eliminating charge of a printing surface of the recording sheet and disposed... as provided by the subject matter of claim 1 of the present application.” In response to applicant's argument that “Maki does not disclose or suggest a charge eliminating unit disposed...” it is respectfully pointed out that given the broadest interpretation of the term “charge eliminating” Maki et al. *does* in fact teach a charge applicator that applies a charge and a “grounding unit” which in the clearest sense of the electrical characteristics involved in charging and discharging or eliminating, would certainly qualify as a charge eliminating unit. Additionally, as the amended **claim 1**, was modified to include further limitations, the change in grounds of rejection was necessitated, and the amended portion is rejected accordingly. In response to applicant's argument that “Fukushima...

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does not disclose or suggest providing a charge eliminating unit eliminating charge of a printing surface of the recording sheet and disposed..." it is respectfully pointed out that the application of an equal and opposite charge would in fact "eliminate" the "charged" characteristics of an object, in effect neutralizing the object. Additionally, as indicated in the previous rejection and again above, while Fukushima et al. shows all specific examples using Direct Current (DC) and by referencing Fukushima et al. and Maki et al. it is acknowledged that one could use Alternating Current (AC) in lieu of DC, and the principles would remain the same (Maki et al. – Detailed Description, Column 7, Lines 35-37 and Column 16, Lines 29-32).

15. With respect to **claim 16** and therefore **claims 17-21** which inherently contain all of the limitations of independent **claim 16**, applicant argued that "Fukushima, like Maki... does not disclose or suggest configuring the image forming apparatus such that... (claim 16 of the present application)" and "Such feature and its advantages are not within the common knowledge of one of ordinary skill in the art..." In response to applicant's arguments, it is respectfully pointed out that the equation used to determine the distance is such a broad limitation that it could conceivably include any possible charging period length ($X = 1$ to infinity) and therefore have an unlimited resulting value for the distance representation. Applicant is directed to the above rejection with further reference to that which would have been obvious to one of ordinary skill in the art at the time of the invention, specifically the purpose of attracting and "letting go" and enabling the conveyance system to move and attract the recording medium while properly affixing said medium to its' surface before eliminating the charge used for attraction.

16. With respect to **claim 22**, applicant argued that "Fukushima, like other cited references, does not disclose or suggest a heating unit..." and "Kawada... does not disclose or suggest a

charge eliminating unit...” and finally “None of the cited references discloses or suggests...” In response to applicant’s arguments, it is respectfully pointed out that it is well known in the art that temperature elevation [i.e. heating] excites electrical activity and the above combination does in fact teach all of the above limitations as is indicated above in the rejection with further explanation provided for clarification.

Conclusion

17. ***Examiner's Note:*** Examiner has cited particular Figures & Reference Numbers, Columns, Paragraphs and Line Numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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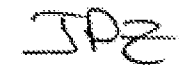
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Zimmermann whose telephone number is (571)270-3049. The examiner can normally be reached on Monday - Thursday, 7:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LUU MATTHEW/
Supervisory Patent Examiner, Art Unit 2861



JPZ